

Quality Control Report
And
Certification of Independent Technical Review

**DELAWARE RIVER MAIN CHANNEL DEEPENING PROJECT
(PENNSYLVANIA, NEW JERSEY, AND DELAWARE)**

COMPREHENSIVE ECONOMIC REANALYSIS REPORT

August 2002

Supplemented December 2002

STATEMENT OF TECHNICAL AND LEGAL REVIEW COMPLETION OF INDEPENDENT TECHNICAL REVIEW

Background

The history and background culminating in the comprehensive economic reanalysis is described below.

Feasibility Report

The Delaware River Comprehensive Navigation Study Main Channel Deepening Interim Feasibility Report and Environmental Impact Statement was completed in February 1992. The Division Engineer's Public Notice for that report was issued in February 1992. Thereafter, the report was reviewed by the Washington Level Review Center (WLRC), and the Board of Engineers For Rivers and Harbors. In June 1992, the reviewers concurred with the findings and recommendations of the reporting officers. Subsequently, the Office of Management and Budget reviewed the project. A Record of Decision (ROD) for the Final Environmental Impact Statement was completed in December 1992. Public Law 102-580, Section 101(6) of the Water Resources Development Act of 1992, authorized the recommended project for construction and was modified by Section 308 of the Water Resources Development Act of 1999 Public Law 106-53.

Preconstruction, Engineering And Design

In 1992, the Preconstruction, Engineering, and Design (PED) study was initiated. The objective of this study was to refine the recommended plan, respond to concerns raised by the WLRC review of the 1992 Interim Feasibility Report and to perform additional supplementary environmental analyses as recorded in the December 1992 Record of Decision for the Final Environmental Impact Statement. The Project Management Plan called for preparation of a Design Memorandum (DM) and an appropriate NEPA document.

With the completion of the DM and Supplemental Environmental Impact Statement as part of the PED study, the project design features for the proposed deepening to 45 feet of the Delaware River Main Channel were finalized.

In May 1996, the results of the PED study were documented in a DM which was approved by the District, as per guidance contained in CECW-EP Memorandum dated 31 May 1995, Subject: Engineering, Design and Dam Safety Guidance. In addition, a Draft Supplemental Environmental Impact Statement (SEIS) was prepared in December 1996 and made available to the public and agencies. The Final SEIS was filed with U.S. Environmental Protection Agency in July 1997. The July 1997 Final SEIS re-affirmed the environmental impacts that were presented in the 1992 Interim Feasibility Report and Final Environmental Impact Statement. A Record of Decision (ROD) for the Final SEIS was completed in December 1998.

Limited Reevaluation Report

Since the date of the economic analysis exceeded the criteria for budgeting the project, a reevaluation of the economics was required in order to budget the project for a new construction start in Fiscal Year 1999. Therefore, in February 1998, a Limited Reevaluation Report was completed to obtain approval to initiate construction, and to serve as the decision document for budgetary purposes, and the Project Cooperation Agreement.

Comprehensive Economic Reanalysis Report

Purpose And Scope. Due to delays in initiating construction in Fiscal Year 2002, the need for another economic reanalysis was required by guidance contained in Engineering Circular (EC) 11-2-183, entitled Corps of Engineers Civil Works Direct Program – Program Development Guidance – Fiscal Year 2004, dated 31 March 2002. Sub Appendix B-2, Construction – New and Continuing; Section B-2.6 Separable Elements of Ongoing Construction Projects, Resumptions, and Unstarted Projects Previously Funded for Construction requires that an economic analysis needs to be performed, since the last approved economic analysis of this project occurred prior to Fiscal Year 1999.

In addition, the U.S. General Accounting Office, in its final June 2002 report on the Delaware River Main Channel Deepening Project, recommended that a comprehensive reanalysis be undertaken to address uncertainties about the project's economics.

To assist the District in conducting the economic reanalysis, the Philadelphia District contracted with David Miller & Associates, Inc. (DMA) in April 2002 to conduct an independent reanalysis of the project economics. In addition, to the independent reviews performed by Corps of Engineers elements, independent technical reviews were arranged and conducted as part of DMA's contract.

Quality Control Process.

- **During the Conduct of Project Economic Reanalysis**

Due to the schedule in conducting the project economic reanalysis, concurrent review was made by multiple parties of data sources, major assumptions, analytical approaches, significant calculations, and interim products.

The concurrent review was accomplished by e-mails and weekly telephone conference calls. Representatives from the contracting team, the District, Division, Headquarters and independent team members participated in reviewing the development of project benefits and costs. Reviews were made of technical memoranda, field interview/site visits and meeting minutes. These review items were prepared as part of DMA's contract.

The Technical Memoranda: contained documentation of interim results, including methodologies, data sources, results of field interviews/site visits, and partial deliverables.

Field Interviews/Site Visits: Site visits were documented and provided to the study team for their review

Meeting Minutes: *Weekly* teleconferences were held to report on-going progress, identify issues, and reach resolution on how to proceed. These meetings included representatives of the contractor team, the District, Division and Headquarters, and QC and ITR team members. The results of these meetings were summarized in writing and distributed to the conferees.

In addition, as part of the DMA contract a Quality Control Plan (QCP) was developed to guide efforts on the Comprehensive Economic Reanalysis Report. The QCP involved review and validation of data, assumptions, models, analyses and documentation of the reanalysis effort. A Technical Review Team (TRT) was selected, consisting of senior personnel in a variety of technical disciplines that were not directly involved in performing the technical analyses, to conduct technical reviews of all elements of this report. The results of their efforts are documented in a Quality Control Report that is being submitted with this Comprehensive Economic Reanalysis Report for review.


Also, as part of the DMA contract, a separate Independent Technical Review (ITR) was conducted by outside experts in navigation economics and engineering. Their results have been submitted directly to the North Atlantic Division, who will conduct a Quality Assurance (QA) review. The report and supporting QA/QC documentation will be reviewed by HQUSACE to ensure that the Corps of Engineers' QA/QC requirements have been followed in the reanalysis effort.

- **Draft Comprehensive Economic Reanalysis Report**

An independent technical review of the draft comprehensive economic reanalysis report was made prior to submission of the report to higher authority. Quality control at the District level was afforded through established District QC procedures. These procedures included peer and supervisory review of technical products. These reviews were in compliance with ER 1105-2-100, Planning Guidance Notebook, dated 22 April 2000. The reviews considered the policy provided in the ER and verified compliance with established policy principles and procedures. This included review of assumptions; methods, procedures, and material used in analyses; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing Corps policy. An independent review team from the Philadelphia District accomplished the independent technical review.

Independent Technical Review Team

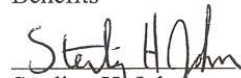
Members:


A.T. Rambo, P.E.
Design

8/9/02
Date


Eugene M. Sencysz
Benefits

8/9/02
Date


Sterling H. Johnson
Cost Estimate

8/9/02
Date

COMPLETION OF TECHNICAL REVIEW

The Independent Technical Review (ITR) team had the ultimate responsibility for quality control. The technical work products and report preparation were the responsibility of the contracting team, the District, Division, Headquarters and independent team members who participated in reviewing the development of project benefits and costs.

TECHNICAL REVIEW FINDINGS


The Philadelphia District conducted several independent technical reviews during the development of the final Comprehensive Economic Reanalysis Report. These reviews have concluded that there are no remaining significant technical concerns.

CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW:

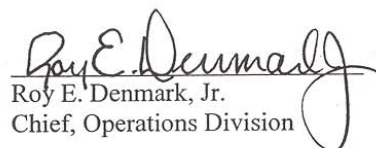
The Comprehensive Economic Reanalysis Report dated August 2002 has been fully reviewed and is sufficient for submittal.


Paul Gaudini, P.E.
Acting Chief, Planning Division

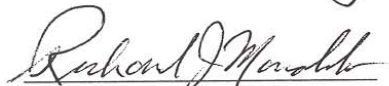
13 Aug 02
Date


Peter M. Tranchik, P.E.
Chief, Engineering and Construction Division

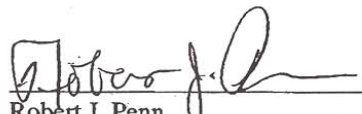
13 Aug 02
Date


Roy E. Denmark, Jr.
Chief, Operations Division

13 Aug 02
Date


Richard J. Maraldo, P.E.
Chief, Programs and Project Management Division


13 Aug 02
Date


Robert J. Penn
Acting Chief, Real Estate Division
Baltimore District

8/6/02
Date

CERTIFICATION OF LEGAL REVIEW:

The Comprehensive Economic Reanalysis Report dated August 2002 has been reviewed by the Office of Counsel, Philadelphia District and is approved as legally sufficient.


District Counsel


Date

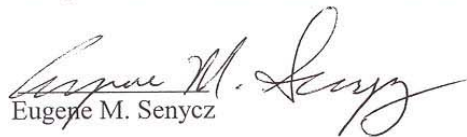
DECEMBER 2002 SUPPLEMENT

December 2002 Draft Comprehensive Economic Reanalysis Report

The August 2002 draft economic reanalysis report was revised to incorporate additional documentation and analysis to resolve comments from 1) the internal technical review team, and 2) the external technical review panel.

The appropriate technical personnel have subsequently accomplished a review of the final December 2002 report. The December 2002 report involved changes in the benefit analysis, but not the cost or real estate analyses. As a result, an independent review was only conducted for benefits.

Independent Technical Review of Benefits


Eugene M. Senycz

12/05/02
Date